

REMARKS

This communication is a full and timely response to the non-final Office Action dated June 10, 2009. Claims 1 and 3-11 remain pending. By this communication, claim 2 is canceled without prejudice or disclaimer to the underlying subject matter, claims 1, 3, 4 and 9 are amended, and claim 11 is added. Support for the amended subject matter can be found, for example, at page 7, lines 14-16 of Applicants' disclosure.

On page 2 of the Office Action claims 2 and 4 stand rejected under 35 U.S.C. § 112, second paragraph for alleged indefiniteness. Applicants respectfully traverse this rejection. However, in an effort to expedite prosecution claim 2 has been canceled without prejudice and claim 4 is amended to address the Examiner's concerns. Withdrawal of this rejection, therefore, is respectfully requested.

Beginning on page 2 of the Office Action, Applicants' claims stand variously rejected for allegedly being anticipated or obvious over the prior art. In particular, claims 1-4, 9, and 10 stand rejected under 35 U.S.C. § 102(b) for alleged anticipation by *Bronicki* (U.S. Patent No. 4,942,736); claims 1-4, 6, 7, 9, and 10 are rejected under 35 U.S.C. §103(a) for alleged unpatentability over Applicants' Admitted Prior Art (AAPA) in view of *Bronicki*; and claims 5 and 8 stand rejected under 35 U.S.C. §103(a) for alleged unpatentability over AAPA in view of *Bronicki* and further in view of *Bellac* (U.S. Patent No. 5,384,489). Applicants respectfully traverse these rejections.

As variously shown in Figures 1-3, exemplary embodiments are directed to a system having a heat storage device, heat transfer means for transferring thermal energy from the heat storage device to a thermodynamic machine, and a heat

generation means is provided to convert electrical energy into heat and then adding the heat to the thermodynamic machine. The system also includes an energy storage device which stores electrical energy as heat energy until such time as it is needed and converted back into electrical energy. The heat energy is stored in an insulating heat storage device. The energy is input into the heat storage device in the form of electrical energy and the energy is output in the form of heat energy and fed directly to a turbine for the production of electrical energy.

Independent claims 1 and 9 broadly encompass the foregoing features. For example, independent claim 1 recites the following:

A system for providing thermal energy to a thermodynamic machine for generating electrical power, comprising,
- a heat storage device for storing thermal energy;
- a first heat transfer means for transferring thermal energy from the heat storage device to the thermodynamic machine for generating electricity,
- first heat generating means for generating heat from electrical energy supplied to the heat storage device wherein said first heat generating means is contained within the heat storage device.

Contrary to the Examiner's assertions, *Bronicki* when applied alone or in combination with other references as alleged, fails to disclose or suggest every feature recited in Applicants' claims.

Bronicki discloses a method and apparatus that produces power from solar energy. In particular, this reference describes an electricity generation apparatus in which heat energy from solar collectors is mixed with compressed air directly at a turbine. The system includes a solar collector 102 that includes tracking reflectors 104 for focusing solar radiation and a solar radiation receiver 106 for receiving focal solar radiation to heat compressed air. The air is compressed by a compressor 140

and is stored in an underground storage reservoir 126. The storage reservoir 126 supplies the stored air to a multi-stage gas turbine 120 from the storage reservoir 126. In one embodiment *Bronicki* discloses that the turbine 120 drives an electric generator/motor 130, which produces electric power that is supplied to a grid. The system also includes a storage reservoir 160 that stores compressed air supplied from either of compressors 140a or 140b.

Bronicki, however, fails to disclose or suggest that a reservoir that includes a means for generating heat from electrical energy. Nor, does the reservoir include means for transferring thermal energy as recited in Applicants' claims. Rather, the reservoir is merely described as storing compressed air provided from various air compressors in the system.

On page 3 of the Office Action, the Examiner alleges that the combination of Applicants' disclosure in the background section of the specification (AAPA) and the disclosure of *Bronicki* renders at least independent claims 1 and 9 obvious. Applicants' disagree because nowhere in the background section of the specification does Applicant describe a system in which a heat storage device includes both a heat transfer means and heat generating means. Above, Applicants have established that the reservoir as described in *Bronicki* does not include heat generating means or heat transfer means as recited in Applicants' claims. For at least these reasons, Applicants respectfully submit that a *prima facie* case of obviousness has not been established.

In summary, *Bronicki*, AAPA, and *Bellac* when applied individually or in combination as alleged by the Examiner, fail to disclose every element and/or the

combination of elements recited in Applicants' claims. As a result, Applicants' claims are neither anticipated nor rendered obvious by the applied references.

To properly anticipate a claim, the document must disclose, explicitly or implicitly, each and every feature recited in the claim. See Verdegall Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Also, the courts have established that the Office has the initial burden of establishing a **factual basis** to support the legal conclusion of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). For rejections under 35 U.S.C. § 103(a) based upon a combination of prior art elements, in KSR Int'l v. Teleflex Inc., 127 S.Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007), the Supreme Court stated that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some **articulated reasoning with some rational underpinning** to support the legal conclusion of obviousness." In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (emphasis added). For at least the foregoing reasons, withdrawal of all rejections under 35 U.S.C. § 102 and 103 is respectfully requested.

Conclusion

Based on the foregoing amendments and remarks, Applicants respectfully submit that claims 1 and 3-11 are allowable and this application is in condition for allowance. In the event any unresolved issues remain, the Examiner is invited to contact Applicants' representative identified below.

Respectfully submitted,

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